

Effects of kinship on territorial conflicts among groups of lions, *Panthera leo*.

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INTRODUCTION

Lions, *Panthera leo* belong to the family Felidae which is the family of the “cats”. The sex of lions is quite easy to distinguish, the males have a mane, a large hairy patch mainly around their neck. A typical male lion weighs from 150-250Kg while females are quite smaller in size ranging from 117-167Kg. In the wild lions can live of up to 20 years while in captivity there have been records of lions living up to 30 years of age. Lions today can be primarily be found in south-central Africa and India, the Gir forest, their last natural habitat in Asia, but in the early years they were also populated in Europe but have been extinct in Greece since 100A.D, their last European outpost. The main differences between Asiatic and African lions are their sizes. Asiatic lions are slightly smaller than the Africans and have shorter manes, thicker elbow and tail tufts and longitudinal skin folds on their stomach. Although they are not the strongest animal they are however regarded as the kings of the wild mostly because of their unique behavior.

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Population density of lions in Africa

Gir Forest, the lions' last natural habitat in Asia.

DISCUSSION

Lions are predators which live in family groups, called prides. The females in the pride are most often related. One remarkable thing is that the females synchronously reproduce and they help each other in the raising of the cubs and may cross-suckle. For example one lioness may take care of her sister's cub while she goes on hunting. Because there isn't a hierarchy in the females there is no aggressiveness towards each other and this helps to reduce infanticide. In the pride there are also one or maybe more male lions that mate with the adult females. And although that sometimes it was thought that only the females hunt it is now known that the males also contribute to hunting. Both male lions and female attack when intruders come into their pride. A pride can consist of males that are related for example brothers and cousins or they can be unrelated that have formed a coalition. Lions form coalitions as to maximize their reproducing success. The stronger the coalition the more it withstands rival intrusions, which means more offspring. After a few years a rival coalition usually comes and evicts the males taking charge of the pride.

Lions are very keen at protecting their territory. At nights they patrol their area and claim their territory with loud roars. A series of experiments have taken place where recordings of male lions were played back near the turf

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of the coalition and the response was immediate. Lions had arrived to engage the intruders. They would search for the speaker and even sometimes attack a stuffed lion that was put beside it.



A snarling lion

It has been observed that lions that were related together co-operated to protect their territory as effectively as others that had formed a coalition and were not related with each other. For lions territorial protection is so important that sometimes one lion would try to search and attack the invader even when the recordings would show that there were three rival lions and engage them still, being so vastly outnumbered.

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Large coalitions often ensure more power and thus are able to dominate the smaller ones, thus ensuring a better success rate. Non relative coalitions though never grow larger than three. Females from different prides though do not form new prides which means that their cooperation is mostly based on relatedness.

In the Serengeti when a lion finds a female in estrus he will mate with her consecutively for four days and he will guard her and attack any other lion that dares to come near. Researches have shown that reproduction is shared equally only in coalitions of two males. In large coalitions though, things are not quite the same. Few males were the fathers of most offspring. For a lion in such a large coalition is not a great deal if he doesn't father any offspring. The reason is quite simple. All animals reproduce so that they can pass their own genes. So why go in a fight to become the dominant male when the one that is now is your brother or cousin? Their offspring will be your nieces and nephews thus the genes are passed over. That's also the reason the non-relatives do not form coalitions of more than two or three lions, it just doesn't pay off.

When rival lions oust the dominants and take over the pride they try to kill all the cubs because the female lions can't become fertile again until either their cubs have grown up or killed. Lionesses try to defend sometimes their cubs but they are very rarely successful in doing so in a one to one fight. In

sisterhood though when many lionesses –sisterhood- try to protect their offspring their chances of success are a lot higher, this is where kinship really pays off for female lions.



A lioness with its three cubs

CONCLUSSION

Although intra-pride relatedness in lions can be high it doesn't really influence territorial behavior. Whether they are related or completely strangers that have formed a coalition, lions will effectively defend their territory against rivals. Kinship plays a significant role in the size of the pride, in reproduction, in lioness's behavior it is however completely irrelevant when we refer to the territorial conflict among lions.

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